Fenwick (G. E.)
With kind regards.

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MALIGNANT DISEASE OF THE RECTUM TREATED BY EXCISION AND COLOTOMY.

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(Read before the Medico-Chirurgical Society of Montreal.)

The origin of cancer still remains a mystery unsolved, and the views of modern surgeons widely differ. Some look upon the cause at the outset to be purely local, a condition in which irritation long-continued will produce an alteration or change in the structure irritated; or that some slight accident or mechanical injury will give rise to the occurrence of tumor or foreign growth, which assumes a malignant type. The evidence of the local origin is the occurrence of the tumor or growth itself, affecting, as it does, a single part or texture of the body whilst all other parts or textures of the body are in apparent healthfulness. The first indication of the disease is its local manifestation. The constitutional implication is consecutive to the local disease. The manner of dissemination of the disease is regarded as evidence of its local origin. Cancer spreads or infiltrates the tissues in its immediate vicinity, it enters the lymphatics and even the blood vessels, and is carried to distant parts in the course and by means of the blood stream. Another method of dissemination is by local contamination, by which is meant that condition in which the disease extends to contiguous structures by actual contact, a well-recognized condition described by many observers. Others, again, regard the development of the disease to be due to some ill-defined and deep-seated condition of the constitution, that there exists a prior state of the body which favors the local manifestation, and that without this predisposition no amount of local irritation or local injury will be attended in its course by the occurrence of cancerous degeneration. That this disease is local in its development can hardly be

presented by the author.

disputed, but that in many cases there exist a constitutional predisposition due to heredity would appear to be equally true. It is more than a mere coincidence that cancer will be found to afflict many members of a family and show itself in several consecutive generations.

If it can be shown that cancer can be arrested by early surgical removal, and that no subsequent recurrence will follow, it would go far to strengthen the position of the localists. The doctrine of the local origin of cancer is of the greatest importance in a surgical sense. Logically, we must admit that if the constitutional manifestations are due to a spread of the disease through the lymphatics and blood stream, there must have been a time when the disease was purely local, and when the lymphatic vessels and blood were not affected. If, then, the disease is *ab initio* local, and that it spreads through those channels to distant parts until the entire system is implicated, the necessity for early surgical interference becomes imperative. Then, again, the constitutionalist declares that the tumor is merely an expression of a previously morbid condition of the whole system, a condition somewhat analagous to a state met with in gouty persons, in which a sudden outburst of inflammation of a joint will occur without any apparent local injury. "Something is absorbed," says Sir William Jenner, "not necessarily pus, and there is in every part a disposition, under irritation, to burst forth into cancer. A gland or other part of the body is bruised or irritated, but such bruise or irritation does not develop extravasation of blood, thickening of tissue, or formation of abscess, but will be followed by the development of cancer." The return of cancer after removal at or near the part first affected or in distant organs is advanced as evidence of the constitutionality of the disease. On this head Sir James Paget says: "I would hold that the constitutional element in the origin of cancer is strongly marked in the constancy and in the method of its recurrence after complete extirpation." That recurrence is the rule after extirpation of cancerous growths experience leads us to admit, still, however, cases do occur occasionally in which no recurrence is observed. These are looked upon as exceptional, either that the life has not been sufficiently prolonged to be a

fair test, or that the disease has actually recurred in some distant part and has escaped observation.

Cancer of the rectum appears to arise in a very insidious manner, and in many cases it is almost impossible to obtain a correct clinical history bearing upon the length of time that the disease has existed. It would appear that the earliest symptom is smarting, itching, and general discomfort about the anus. As has been remarked, the patient is constantly aware that he has a rectum and anus, and would be glad if he could dispense with them even for a time. A dull, aching pain is more or less constant, and is increased by exercise or after defœcation. This discomfort increases during the night, so that the patient's rest is broken, which has a marked influence on his general appearance. As the disease advances, the patient experiences some difficulty in obtaining relief, and if he examines his stools they will be found streaked with blood or bloody mucus, or be flattened or grooved, or exceedingly small, as if forced through a narrow or contracted opening, or else broken up into small masses or hardened concretions not unlike sheep dung, and symptoms of obstruction soon follow. There is an inability to thoroughly empty the bowel, a constant sense of something being left behind, which cannot be got rid of; this leads to straining, and blood and slime come away, which is often offensive. The external orifice, unless carefully bathed, will become tender and excoriated, and tenesmus is occasionally very distressing. In this condition the patient suffers from increased pain, sometimes of a lancinating character, a constant desire to go to stool, an uncomfortable fulness, and much wind. In this stage, diarrhœa frequently alternates with constipation. The pain now becomes almost constant, the patient looses his appetite, food, if taken in moderate quantity, appears to add to his distress, he rapidly emaciates, the pain becomes more severe and constant, requiring opiates to procure rest and sleep, the liver becomes secondarily involved, the feet and legs œdematous, and the patient sinks exhausted or through a sudden invasion of peritonitis.

The period of duration of the disease is stated to be from eight months to three or four years. In reference to this point,

much will depend on its nature and the age of the patient. If it is a fungating, soft mass protruding from the mucous surface, prone to bleed, and occurring in a young person, the downward course will be rapid. If, on the other hand, it is a superficial spreading ulcerating mass, in an individual beyond middle life or in old age, the disease may exist for months or years before the patient is released by death.

Examination of the Bowel.—In conducting an examination, the patient should be previously prepared. A dose of castor oil should be given the day before that fixed for the examination. On the morning of the examination the bowel should be well washed out by an enema. Place your patient on his left side, with his knees well drawn up; in this position fully four inches of the bowel can be reached by the finger. If you examine without an anæsthetic, and direct your patient to bear down, a little more of the bowel can be explored. Anæsthesia is, however, a great assistance, more especially in women, as with the finger in the vagina the ulcerated surface, if such exists, and is within reach, can be forced out through the anus and the character of the disease accurately made out. On introducing the finger, a belt of healthy mucous membrane is sometimes met with between the anal margin and the commencement of the morbid growth. A common situation is somewhat less than two inches from the anal opening. On examination, the mass does not always feel like a distinct tumor, but rather a thickening or hardening of the submucous tissue. The mucous membrane may be ulcerated, which is readily made out. The base feels firm and hard, and the edges raised and overhanging. This sometimes appears to be the extent of the disease. If a distinct tumor exists, this will be felt projecting into the bowel; the growth may be situated in the anterior wall or on either side, or engaging alone the posterior wall, or, again, you may have it infiltrating the entire circumference of the bowel, forming a complete annular stricture. The inguinal glands should always be carefully inspected, although in many cases these are not in any way implicated. The absence of glandular enlargement in this region cannot therefore be taken as evidence of the non-existence of malignant disease.

Treatment.—In considering the treatment of cancer of the

rectum, very much will depend on the character and extent of the disease as to what operative measure should be selected, or, indeed, whether any operation should be attempted.

From the limited experience I have had of the operation of excision, either in part or in whole, of the lower end of the rectum, I believe that in cases where the entire mass of disease can be removed, and that the disease has been seen and recognized sufficiently early, the patient will thereby be rendered more comfortable, and the progress of the disease will, for a time at least, be arrested. I cannot agree with those who boldly declare that extirpation is absolutely curable. Cancer of the rectum shows different degrees of malignancy; whilst in some, rapid recurrence is observed, in others the disease does not recur, and the patient may escape altogether. They may live in comparative healthfulness and comfort for years, and ultimately die of some other disease.

With regard to the manner of proceeding to extirpate the rectum, I have, in nearly all the cases that have come under my observation, removed the whole circumference of the bowel. In commencing the operation, I make an incision in the median line, in the male, commencing behind the bulb of the urethra, and in the female, immediately behind the fourchette, extending it through the perineum, bisecting the anus and reaching the point of the coccyx. After this first incision, all bleeding vessels are picked up with the forceps and ligatured if necessary. If the anal opening is engaged in the disease, it must be removed by a semi-circular sweep of the knife on either side, cutting into the ischio-rectal fossæ. If, however, the anus is healthy, I think it of importance to save it. The surgeon can then proceed to free the rectum, and in doing this I have usually found the finger all that was necessary. The fibres of the levator ani soon come into view; these must be divided so as to get above that muscle. Having thoroughly separated the bowel all around from the contiguous structures, I then proceed to remove it. A small segment of the gut is transfixed with a needle threaded with stout silk or thread; the portion of the bowel between the points of entrance of the needle is then divided with the scissors,

and the thread drawn through the opening. I thus have two ligatures by which I can attach the divided end of the bowel to the anus if it is left, or to the margin of the skin if the anus has been removed. In this way I proceed cutting through a portion of the bowel and stitching it to skin until I have the entire mass removed. My ligatures are so arranged as to take in any bleeding points, but if any of the straight vessels give out, the bleeding can readily be controlled. After ablation of the gut, a couple of drainage-tubes are introduced to the extreme depth of the wound, and the part dressed in the usual way. Of late I have been in the habit of dusting it over with iodoform and applying a dry pad of jute, kept in position by a T bandage. The wound is kept irrigated with very weak carbolized water once or twice a day, or oftener if necessary. This altogether depends on the amount of discharge or the passage of fæces. I think cleanliness is very important in these cases. The ligatures very rarely set up any irritation, not more so than those introduced in colotomy, and the subsequent results are, so far as I have observed, more satisfactory. It is of the greatest importance to save the anus, not on account of the superficial sphincter —although I suppose it would in time contribute in restoring the power of retention of the bowel contents—but on account of its forming an attachment to the ablated bowel, and subsequently more closely resembling the natural state of the parts. The operation seems more favorable in women than in men ; it is certainly more easy of performance in the former, and it is said that this disease is more frequently met with in women than men.

With reference to colotomy in rectal cancer, I do not think it called for, except in cases of obstruction. As a means of putting the parts engaged in the disease at rest, it may be attempted, but unless there is obstruction almost complete, it will not have this effect. So far as I can judge from my own observations, colotomy has not arrested the progress of the disease. It will render the service of relieving the patient of that distressing state in which symptoms of obstruction are advancing and becoming urgent. And, without doubt, it ought to be performed when such a state exists ; but I should expect the disease to advance with gradual and steady progress towards the end.

Case I.—This was a case that came under my observation early in the year 1876. I was consulted by a medical gentleman of this city in reference to an ulcer situated on the left side of the anus, and extending up the bowel, engaging only the superficial sphinter. It was in a woman aged 58. On examination, the ulcer was about the size of a penny-piece, deeply excavated, with raised edges, the base of the sore being dry, and lacking healthy granulations. The gentleman whose case it was had regarded this as a syphilitic sore, and had made use of constitutional treatment and the application of black wash. It was very painful, and the tenesmus and straining almost constant. No benefit had followed the treatment, but rather an extension of the disease. I advised its removal with the knife. This was consented to by the patient, as her distress was very great. It was removed *in toto*, cutting wide of the disease, and going up the bowel for about 1½ inches. There was considerable hemorrhage, but we tied the vessels as we went on, and in this way saved a considerable loss of blood. It was in the days when we had not at hand the surgical appliances of the present time. This woman made a fair recovery, and the disease had not recurred at the end of two years. The subsequent history I am unable to give.

Case II.—*Cancer of the Rectum.*—Girl, aged 12 years, admitted into the hospital 7th January, 1876. From appearance, the disease was taken for syphilitic condylomata, very extensive; it presented a broad, flat, raised growth of the mucous membrane, with submucous infiltration. This condition extended up the bowel as far as the finger could reach, with intervals here and there of healthy membrane. Constitutional treatment was in this case followed up for some time, as, although there was no history of syphilis, yet the appearance of the growth was rather suggestive. The growth increased under anti-syphilitic remedies, and the entire circumference of the bowel was engaged. The discharge was constant, ichorous, and bloody. The alteratives were omitted and tonics and dieting carefully followed up. The discharge, however, continued, and produced excoriation of the anus. The disease appeared to be steadily on the increase, so that, with the

view of setting the parts at rest, colotomy was performed. This gave apparent temporary relief, and before the child left the hospital all appearance of fæces had ceased to be passed per anum. The progress of the disease was not affected by the colotomy. The patient lived for some nine or ten months after leaving the hospital, and ultimately died from exhaustion or probably from organic implication. I was merely informed by the mother that the little girl died some months after, within the year.

Case III.—*No history of Cancer in his family.*—M. L., aged 62, a French-Canadian, admitted 7th Nov., 1877. This man had suffered from piles, and 12 years previously had been treated by the application of nitric acid. About the end of June of that year he had noticed severe lancinating pains in the rectum, which increased greatly on going to stool. The difficulty he experienced in relieving his bowels was great, and for the last two months he could alone procure relief by a tepid water injection. On examination, a large cancerous mass projected from the left side and completely filled the bowel. There was every likelihood of the bowel becoming completely obstructed, and as his general condition was favorable, the operation of colotomy was recommended. This was done on the following day, 8th November. There was great difficulty in finding the bowel, which was apparently very much fixed, believed to be from extension of the disease up the bowel, engaging the sigmoid flexure. The patient made a good recovery, and lasted in comparative comfort until some time during the following spring, when he died. No post-mortem examination could be obtained. In this case colotomy was perfectly successful, and gave comfort and relief to the patient, and I think we may admit that it prolonged his life, symptoms of obstruction had become quite urgent.

Case IV., *July 22nd*, 1878.—Mrs. N., an old lady of 70 years, was reported to be suffering from dysentery. She informed me that a mass of the bowel was hanging down, which gave her great distress. There was continued and distressing tenesmus, with constant straining, and a sense of fulness and distension of the bowel. On examination, a fungous mass, ulcerated, with

everted edges, was observed completely surrounding the anus. On exploration, I found the disease implicated about two inches of the anterior wall, but I could get well above the diseased tissue. I advised the operation of extirpation, and it was performed on the 6th August, 1878. The patient made a good recovery. Between three and four inches of the bowel was taken away, and the entire sphincter. The interest of this case consists in the after results. This old lady died in April of last year, 1885, having lived six years and eight months after the excision. The cancer never returned, and although she had lost the entire sphincter, yet she regained retentive power. She died, apparently in a faint, from supposed heart disease. No post-mortem examination was held.

Case V.—Mr. A., a farmer, a tall, gaunt man, aged 56, consulted me in January, 1880. He had suffered from symptoms of what was supposed to be piles for some five months. After preparation, an examination was made, when it was found that the entire circumference of the bowel was engaged in cancerous ulceration, being more largely situated at the anterior part. The finger could be passed well above the diseased mass, where the mucous membrane felt healthy. Excision of the end of the bowel was recommended, and the operation performed in due course on Thursday, 22nd January, 1880. About 3½ inches of the bowel was extirpated in separating it from the bladder one seminal vesical was engaged apparently, and was removed. In this, as in the former case, the bowel was brought down after ablation of the disease, and stitched to the skin of the buttock, around where the anus had been. The man made a good recovery, and lived in comparative comfort for three years after. He came occasionally to Montreal to see and consult me, but ultimately the disease returned higher up, most likely engaging the liver, and he died, as I was informed by his physician, worn out, but with no difficulty in the bowel.

Case VI.—An American, admitted into the General Hospital with cancer of the anterior wall of the rectum, and apparently infiltrating the urethra and upper part of the prostate gland.

An attempt was made to relieve him of his difficulty, and the disease was removed, but the subsequent irritation of the bladder was such that he died from exhaustion several days after the operation.

Case VII.—R. M. D., aged 48, sent to me by my friend Dr. Alloway in November, 1883. The following history was elicited: The patient had been suffering for some months from pain and difficulty in evacuating the bowels. He stated that for upwards of six months he had not passed a satisfactory stool. There was a sense of continued fullness about the rectum. This would give rise to considerable straining, frequently repeated during the day, when a small evacuation would follow, sometimes liquid, but more often in small, hard, dry masses, always mixed with blood, and sometimes blood apparently pure, and in considerable quantity, would be passed. There was a dull, aching pain occasionally, but not constantly, and a continued discharge of slimy mucus. The day following his admission to the private hospital, or on the 25th November, 1883, an examination was made, the bowel having been previously well washed out, when the following condition was found to exist: Along the posterior wall, and about two inches above the anus, the finger encountered a projecting growth, circular in form, and in size about that of a half dollar; there was a narrow constricted neck, and from the upper free surface there appeared to sprout a fungous, soft mass not unlike the head of a mushroom; a second growth, the same in character, but somewhat smaller in size, was noticed a short distance above, quite in reach of the finger; and beyond, the mucous membrane felt soft and healthy. The submucous tissue in the vicinity of these tumors seemed to be thickened and infiltrated; the fungus mass readily broke down and bled freely when roughly handled. On the following Tuesday, 27th November, I proceeded to remove these tumors in the following manner:—The patient having been previously prepared and placed under ether, he was tied in the usual lithotomy position. The anus appeared to be in a healthy state. An incision from its posterior margin was then carried backwards to the point of the coccyx, dividing the superficial and deep sphincter; a large-sized Sims'

speculum was then introduced, and the front wall of the rectum raised and drawn forward ; the entire mass of the disease was thus brought into view. The mucous membrane and submucous tissue was then slit up, cutting wide of the disease and going well above it. The entire mass, with the submucous tissue, was removed with the scissors. The hemorrhage was very considerable ; the vessels appeared to be large, and could not be seized by the forceps, so that a needle, double-threaded with stout hempen thread, was passed beneath the base of the situation of the tumors and a ligature tied on both sides. This completely arrested the bleeding. The divided margin of the bowel above was then brought down and stitched to the margin of the divided anus. The posterior incision was left to granulate and contract. The patient made a good recovery, and as the tumor, on examination by an expert, was pronounced a villous growth and probably non-malignant, I had every hope that the relief would be permanent. Before the end of January the wound had quite closed, and he had control over the bowels and retentive power. This patient, however, consulted me again in January 1885, and on examination, the anal opening was found very much contracted and surrounded by several hard nodular masses which resisted the introduction of the finger. On getting well into the bowel, the front wall was found engaged in the disease ; it did not appear to be very extensive, as healthy tissue 2½ inches up could be readily reached. He was in great distress, as the symptoms of obstruction were marked. He was unable to get anything away except with a warm-water enema, and then the relief was but temporary. These symptoms had but recently set in ; up to the end of November he had enjoyed comparative comfort. In consultation with my colleague, Dr. Shepherd, we determined that one of two things had to be done,—either perform colotomy or remove the lower end of the rectum. As the disease appeared to be limited to the lower portion of the bowel, it was decided to recommend its removal, and if the disease returned, which in all likelihood it would, colotomy could subsequently be resorted to. The operation was performed on the 19th January, 1885, or about fourteen months after the first operation. On this

occasion the entire circumference of the bowel was removed. The bowel freed from its attachments was brought well down, and after ablation the stump was stitched to the edge of the integument. He made a rapid recovery, and left the hospital at the end of three weeks. At this time he had partial retentive power, was sensible when the bowels were going to act, and could delay it sufficiently long to enable him to make suitable preparations for cleanliness.

I find, on reference to my note-book, that this patient returned in August suffering from symptoms of obstruction. He was greatly changed; from being a stout, robust man, he had become emaciated, and presented a well-marked cachectic appearance. The disease had returned, and had almost closed the outlet. Colotomy, as a palliative, was recommended, and performed on the 27th August. This gave him great relief, as before it the sense of distension was distressing; without doubt it prolonged his life in comparative ease, but he gradually sank and died on the 27th December following, or four months after the last operation.

Case VIII.—Mrs. C., aged 45, a tall, spare woman, consulted me on the 19th January, 1886. She gave me the following history: For several years she has been of a constipated habit, and had required the use of aperient remedies to obtain relief. Towards the end of July last she experienced great distress; she had no expulsive power, as there appeared to be something in the bowel which she could not get rid of. This feeling of fullness gave rise to straining and spasm, which was painful; occasionally she would pass blood in some quantity and sometimes small hard, dry masses, and occasionally had diarrhœa. Her physician had made an exploration with the finger, had pronounced it to be a case of internal piles, and had given her a sulphur and cream of tartar electuary, with some ointment to be introduced into the bowel. This treatment gave her temporary relief. For the past two months she had not noticed anything like a natural stool; little, round hardened masses would come away, leaving behind a burning, smarting pain

extending up the bowel and radiating down the thighs, which would persist for an hour or so after going to stool. There was a discharge of bloody mucus, which had somewhat increased of late.

After due preparation, an examination was made under ether. The anus appeared quite healthy ; there was no evidence of external hemorrhoids. On passing the finger into the bowel, the mucous membrane seemed to be quite healthy for an inch and a half above the verge of the anus ; the finger then came upon a nodular surface, hard, resisting, and in ridges. The mucous surface felt raw and eroded. This was situated in the front wall, and could be felt distinctly through the vagina. The vaginal membrane appeared quite free, and did not seem to be implicated. With some little trouble the ulcerated mass was forced out through the anus and brought well into view ; this aided materially the diagnosis. The finger could be passed well above the ulcerated mass, and the bowel felt quite healthy. There were two enlarged glands observed beneath the mucous membrane, but the finger could be passed well above, where the membrane felt quite soft and healthy. It was determined to recommend removal of the lower end of the bowel, and the operation was performed in the following manner on the 3rd of February, 1886 :—The patient, being etherized, was placed on the table in the lithotomy position. The anus not being implicated, it was decided to save it. The incision was commenced immediately behind the fourchette, in the raphé, and carried backwards to the point of the coccyx. This incision bisected the anus, and on separating the flaps the extent of the disease outwards could be readily seen. The next incision divided the bowel on either side into the ischio rectal fossæ ; this was carried well to the inside of the superficial sphincter, but wide of the diseased structure. This appeared to be of advantage, as no skin was sacrificed, and it aided materially the subsequent steps of the operation. The front wall of the rectum was now separated from the posterior vaginal wall its entire extent, until the serous fold was reached. This part of the operation was accomplished with the finger alone ; the parts separated without much diffi-

culty, but it had to be done with care, as the thin vaginal wall would readily tear. This, unfortunately, did occur, and had subsequently to be closed with catgut sutures. The posterior attachments were then separated, and the levator ani fibres on either side were divided with the scissors. The bowel was now free and could be drawn down, and was divided with the scissors, and as divided it was attached to the skin of the anus by four sutures on either side. There was very little hemorrhage, as the vessels were picked up as divided and, when necessary, ligatured with fine catgut. The fold of the peritoneum, where it comes down between the rectum and vagina, was freely exposed, partly detached from its rectal surface, and pushed back. This was effected without damage to that membrane, as the loose connective tissue readily separated. Large-sized drainage-tubes were introduced both in front and behind to the full depth of the wound; two stitches were introduced in the perineum and brought the parts well together. The parts were well dusted with iodoform and dressed with dry lint and a pad of marine tow, the dressing held in position by a T bandage. The operation was tedious, as at certain stages great care had to be exercised. The separation of the bowel from its attachments was effected with the finger and a few snips of the scissors; fully four inches of the bowel was removed, extending well above the implicated surface.

Evening, 9 *p.m.*—Patient quite recovered from the ether; is comfortable; complains of slight smarting about the wound, but it is not distressing. Pulse 88; temperature 99°. The nurse was instructed to remove the urine with the catheter. Patient had taken a little iced milk, but did not care to take much; she was nervous, and not inclined to sleep, so that ¼-gr. of sulph. morphia was given hypodermically.

Feb. 4th.—Passed a good night, felt well and refreshed. Temperature 98°; pulse 76. The case progressed rapidly towards recovery. The temperature never rose above 99.4°; this was on the sixth day, and was apparently due to the irritation of the stitches, several of which were removed. The parts closed rapidly, and she left the hospital for her home on the

eighteenth day after the operation. At that time she was aware when the bowels were going to act, and could make preparations.

I have since heard from this patient. She is improving in health and general condition. I shall watch the results with interest.

I have to acknowledge the kind assistance of my colleagues, Drs. Roddick, Shepherd and Bell, who were present and gave valuable aid and advice throughout this case.